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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
SCHULTZ, WILLIAM C

ART UNIT	PAPER NUMBER
2664	

DATE MAILED: 08/11/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/354,640	GAN ET AL.	
	Examiner	Art Unit	
	William C. Schultz	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 June 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21 and 24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *14* is/are allowed.

6)☒ Claim(s) *1-13,15-19,21 and 24* is/are rejected.

7)☒ Claim(s) *20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

1. Claims 1-2,4-5,8-13,15-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Medard et al. [U.S. Pat. 6,047,331].

Regarding claims 1,8,13,18, Medard et al. discloses all the following subject matters: a network for forwarding packets from a source device to a destination device, said network including a plurality of network elements including nodes and connecting links, a master server for monitoring the network and establishing an initial route between the source device and the destination device, wherein at least one of the nodes comprises: **(col. 5 ,lines 1-20)**

a processor to compute an alternative route for the initial route; **(col. 9 ,lines 44-48)** by identifying one or more alternative-route enabled nodes, identifying downstream network elements, and generating the at least one alternative route based on the identified one or more alternative-route enabled nodes and the identified downstream network elements; **(fig. 1, parts 12a-e; col. 9, lines 44-55 & line 66 – col. 10, line 5)**

a storage space to store the initial route and the alternative route; **(col. 10, lines 20-27)**

a mechanism to detect failure in a downstream network element in the initial route; and **(col. 10, lines 30-40)**

a forwarder to automatically forward a packet to the next node on one of the at least one alternate route. **(col. 10, lines 35-40)**

Further regarding claim 8, Medard further discloses automatically forwarding packets on the alternative route without communicating with either the source or the destination. **(col. 10, lines 30-40)**

Further regarding claim 18, Medard further discloses storing, at each of the select intermediary nodes, the alternative route; **(col. 10, lines 6-18)**

Regarding claim 2, Medard et al. further discloses the network is a connection-oriented network with a plurality of established initial routes. **(col. 6, lines 35-38)**

Regarding claim 4, Medard et al. further discloses the processor computes an alternative route not including the downstream network element in the initial route. **(col. 5, lines 12-27, specifically lines 22-23)**

Regarding claim 5, Medard et al. further discloses the processor computes an alternative route not including a plurality of nodes associated with the downstream node and link as likely to fail according to network configuration data. **(col. 10, lines 30-40)**

Regarding claims 9,11,17,19, Medard et al. further discloses determining the initial route further comprises:

determining a shortest path from the destination device to the source device within the network; **(col. 5, lines 47-48)**

refining the path according to administrative constraints; and establishing the path as the initial route. **(col. 5, lines 1-27)**

Regarding claim 10,15,16, Medard et al. further discloses refining the path comprises rejecting the path exceeding bandwidth allocation **(col. 11, lines 26-52)** and hop limit. **(col. 5, lines 47-48; col. 11, line 48)**

Regarding claim 12, Medard et al. further detecting a failure is conducted locally by a node preceding the failed element without requiring notification of a master server or an ingress node. **(col. 10, lines 30-40)**

2. Claim 24 is rejected under 35 U.S.C. 102(e) as being anticipated by Ahmad et al. [U.S. Pat. 6,359,857].

Regarding claim 24, Ahmad et al. discloses all of the following a network for forwarding packets from a source device to a destination device and including a plurality of intermediate network nodes, the plurality of intermediate network nodes comprising:

at least one first node configured to:

store an initial route from the source device to the destination device and at least one alternative route from the source device to the destination device, **(col. 3, lines 1-4)**

detect a failure in a downstream network node in the initial route, and **(col. 3, lines 5-9)**

automatically forward a packet to a node on one of the at least one alternative route in response to detecting the failure; and **(col. 3, lines 15-20)**

at least one second node configured to:

store the initial route, **(col. 3, lines 10-12)**

detect a failure in a downstream network node in the initial route, and **(col. 3, lines 5-10)**

forward a failure message to an upstream first node in response to detecting the failure, the failure message causing the upstream first node to automatically forward a packet to a node on one of the at least one alternative route. **(col. 3, lines 10-12)**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6,21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Medard et al. [U.S. Pat. 6,047,331] as applied to claim 1 above, and further in view of Hsing et al. [U.S. Pat. 6,167,025].

Regarding claims 6,21, Medard et al. discloses that the mechanism could be one of a plurality of methods including diagnostic signal not received. **(col. 10, line 33)** Medard fails to disclose the mechanism to detect failure sends communication packets to downstream nodes at regular intervals.

Hsing et al. discloses a mechanism to detect failure sends communication packets to downstream nodes at regular intervals. **(col. 13, lines 5-30)**

It would be obvious for one skilled in the art at the time of invention to modify Medard with Hsing et al. The motivation to do so is to have assured data transport which provides assurance that a link is up and running or quickly detect a failure. **(col. 4, line 66 – col. 5, line 6)**

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Medard et al. [U.S. Pat. 6,047,331] as applied to claim 1 above, and further in view of Ohno [U.S. Pat. 6,252,853].

Regarding claim 3, Medard et al. discloses the restoration method above but fails to disclose that the router is a label switched router.

Ohno discloses a network restoration method for a label switched router in a connection-oriented network (ATM). **(abstract; fig. 1; fig. 2 – fault table; col. 1, lines 21-26)**

Both perform network restoration by computing alternate routes and saving those alternate routes in a table to be looked up once a failure occurs.

It would be obvious for one skilled in the art to modify Medard et al., a network restoration method for connection-oriented networks with Ohno label switched routing with a network restoration method. The motivation to do so is as Ohno suggests in column 1 where transfer processing of datagrams require confirmation of destination and label switching does not.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Medard et al. [U.S. Pat. 6,047,331] and further in view of Ohno [U.S. Pat. 6,252,853] as applied to claim 3 above, and further in view of R. Callon et al. [draft-ietf-mpls-framework-02.txt, 11/21/1997]

Regarding claim 7, Ohno discloses that a lookup occurs on detection of a fault and that the router is a label switched router. **(col. 5, lines 42-60)**

Ohno fails to disclose the forwarder swaps a label on a packet with another value and forwards the packet to the next node.

Callon discloses that a label swap is the basic forwarding operation consisting of looking up an incoming label to determine the outgoing label, encapsulation, port, and other data handling information and that label swapping is a forwarding paradigm allowing streamlined forwarding of data by using labels to identify streams of data to be forwarded. **(pg. 6, lines 10-20)**

Ohno discloses that it keeps a table of the ports and VPI's for the alternate routes. **(fig. 2)** and Ohno discloses that the route is a label switched router. It would be obvious to use the VPI field as the label for alternate routes and perform the forwarding disclosed in the IETF doc. The motivation to do so (label swapping) is as Callon discloses on page 2, by "providing greater flexibility ... by allowing new routing services ... without a change to the forwarding paradigm". **(pg. 2, end of first paragraph of sec. 1.1)**

Allowable Subject Matter

Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 14 is allowed.

Response to Arguments

Applicant's arguments filed 6/5/2003 have been fully considered but they are not persuasive.

1) "Medard does not distinguish between between network nodes that perform alternative routing and those that do not"

The amended claim language says, " ... by identifying **one or more** alternative-route enabled nodes ..." Medard discloses starting on column 9, line 55, that, "the APS processor receives information concerning the availability or desirability of installing or maintaining network links between particular nodes ..." Since all the nodes in figure one are illustrated as being represented by node 12a then all the nodes in figure 1 are capable of being alternative-route enabled.

2) "amended claim 18"

As discussed above all the nodes in figure 1 are the same. Medard discloses in col. 10, lines 6-18 that, "each source node is provided having a primary and a secondary path to every other node 12 in the network" The claim does not claim a specific node is performing this action just that it happens when a node fails on the path. Again, all the nodes are the same as node 12a so all those nodes are doing the same action as node 12a.

3) "All the 103 rejections are faulty because of Medard et al. failing to teach all aspects of amended claims 1,8 and 18"

Since Medard is shown to disclose the newly amended claims the 103 rejections now stand.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Schultz whose telephone number is 703-305-2367. The examiner can normally be reached on M-F(7-4)(first bi-week) M-Th(7-4)(second bi-week).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-9508 for regular communications and 703-305-9000 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

William Schultz
August 1, 2003

WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600